

What is claimed is:

*a automatic monaural/stereo*

1. In <sup>a</sup> headphone having two earpieces in which each earpiece includes an acoustical driver, a connection cord connected to each acoustical driver that is terminated in a stereo headphone plug for accessing a conventional two channel stereo audio source, said headphone being adapted for automatically accessing a typical single channel monaural signal source when plugged into a monaural source output jack, and for automatically accessing a typical stereo source when plugged into said stereo source output jack, said adaptation comprising:

a coupling impedance connected from one terminal of one of said acoustical drivers to one terminal of said other acoustical driver, said impedance being of such magnitude with respect to the impedance of said acoustical drivers that a monaural signal appearing at said terminal of only one acoustical driver will be coupled to said terminal of said other acoustical driver with ~~such~~ little reduction in the magnitude of said signal that the listener will perceive the monaural signal as being heard with substantially equal loudness at each earpiece; and furthermore, that the ratio of said coupling impedance to said output impedance of said typical stereo audio source is <sup>so low</sup> ~~such~~ that when accessing said typical stereo audio source, the stereo source separate first and second channel signals appearing at their respective earpieces are heard with substantially no reduction in loudness, and the crosstalk between channels resulting from said coupling impedance will not substantially change the channel separation or stereo imaging as afforded by the two channel stereo source,

whereby, the user of said headphone can access either a typical monaural or typical stereo audio source without having in advance to determine the nature of the source and can automatically hear either source substantially as it would be heard using separate dedicated headphones wherein one headphone is configured and selected especially for a monaural source and the other headphone is configured and selected especially for a stereo source.

2. The automatic monaural/stereo headphone defined in Claim 1 wherein the connection plug is a one-eighth inch stereo plug and there is included with the headphone a one-eighth-to-one-quarter inch stereo plug adapter.

3. The automatic monaural/stereo headphone defined in Claim <sup>2</sup> ~~1~~ wherein said plug adapter is provided with attachment means to the headphone that keeps said plug adapter with the headphone when it is not in use thereby avoiding its misplacement and potential loss.

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4. In ~~a stereo~~ headphone comprising first and second earpieces in which each earpiece includes an acoustical driver having first and second differently identified connection terminals, a connection cord connected to each acoustical driver that is terminated in a conventional stereo phone plug, said headphone being adapted for automatically accessing a single channel monaural audio source having first and second identified connection terminals and for accessing a typical stereo audio source having separate first and second audio channels, each of said channels having first and second identified connection terminals, said phone plug having a sleeve contact for connecting said first identified terminal of each acoustical driver to said first identified terminal of said monaural audio source and to said first identified terminals of each said first and second channel outputs of said stereo audio source, and a tip contact for connecting said second identified terminal of said first acoustical driver to said second identified terminal of said monaural audio source and to said second identified terminal of said first channel output of said stereo source, and a ring contact for connecting said second identified terminal of said second acoustical driver to said second identified terminal of said second channel output of said stereo source, said adaptation comprising:
- a coupling impedance connected between said second identified terminal of said first acoustical driver and said second identified terminal of said second acoustical driver, said impedance being of such magnitude with respect to the impedance of said acoustical drivers that said monaural audio signal appearing at the second identified terminal of said first acoustical driver will be coupled to said second identified terminal of said second acoustical driver with ~~such~~ little reduction in the magnitude of said signal that the listener will perceive that the monaural signal is being heard with substantially equal loudness at each earpiece; and furthermore, that the ratio of said coupling impedance to said output impedance of said typical stereo audio source is ~~such~~ *so low* that when accessing said typical stereo audio source, said separate stereo first and second channel signals appearing at their respective earpieces are heard with substantially no reduction in loudness, and the crosstalk between channels resulting from said coupling impedance will not substantially change the channel separation or stereo imaging as afforded by the two channel stereo source,
- whereby, the user of said headphone can access either a monaural or typical stereo audio source without having in advance to determine the nature of the source and can automatically hear either source substantially as it would be heard using separate

dedicated headphones wherein one headphone is configured and selected especially for a monaural source and the other headphone is configured and selected especially for a stereo source.

5. The automatic monaural/stereo headphone defined in Claim 4 wherein the connection  
5 plug is a one-eighth inch stereo plug and there is included with the headphone a one-eighth-to-one-quarter inch stereo plug adapter.

6. The automatic monaural/stereo headphone defined in Claim 5 wherein said plug adapter is provided with attachment means to the headphone that keeps said plug adapter with the headphone when it is not in use thereby avoiding its misplacement and potential loss.

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10 7. In a ~~stereo~~ headphone comprising first and second earpieces in which each earpiece includes an acoustical driver having first and second differently identified connection terminals, a connection cord connected to each acoustical driver that is terminated in a conventional stereo phone plug, said headphone being adapted for automatically accessing a single channel monaural audio source having first and second identified connection terminals  
15 and for accessing a typical stereo audio source having separate first and second audio channels, each of said channels having first and second identified connection terminals, said phone plug having a sleeve contact for connecting said first identified terminal of each acoustical driver to said first identified terminal of said monaural audio source and to said first identified terminals of each said first and second channel outputs of said stereo audio source,  
20 and a tip contact for connecting said second identified terminal of said first acoustical driver to said second identified terminal of said monaural audio source and to said second identified terminal of said first channel output of said stereo source, and a ring contact for connecting said second identified terminal of said second acoustical driver to said second identified terminal of said second channel output of said stereo source, said adaptation comprising:

25 a first coupling impedance connected between said second identified terminal of said first acoustical driver and said plug tip contact, and a second coupling impedance connected between said second identified terminal of said second acoustical driver and said plug tip contact, said first and second impedance being of such magnitude with respect to the impedance of said acoustical drivers that a monaural signal applied to  
30 said plug tip contact is coupled to first and second acoustical driver with insignificant reduction in the magnitude of said signal and the monaural signal is heard with equal loudness at each earpiece; and furthermore, that the ratio of said coupling impedance to

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said output impedance of each channel of said typical stereo audio source is <sup>so low</sup> ~~such~~ that  
when accessing said typical stereo audio source, said separate stereo channel signals of  
equal magnitude appearing at their respective earpiece drivers are heard with ~~such~~ little  
5 difference in loudness that a listener will perceive them to be of equal loudness, and the  
crosstalk between channels resulting from said first and second coupling impedance  
will not substantially change the channel separation or stereo imaging, as afforded by  
the two channel stereo source,

whereby, the user of said headphone can access either a monaural or stereo audio source  
without having in advance to determine the nature of the source and can automatically  
10 hear either source substantially as it would be heard using separate dedicated  
headphones wherein one headphone is configured and selected especially for a  
monaural source and the other headphone is configured and selected especially for a  
stereo source.

8. The automatic monaural/stereo headphone defined in Claim 7 wherein the connection  
15 plug is a one-eighth inch stereo plug and there is included with the headphone a one-eighth-to-  
one-quarter inch stereo plug adapter.

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9. The automatic monaural/stereo headphone defined in Claim <sup>8</sup> ~~7~~ wherein said plug  
adapter is provided with attachment means to the headphone that keeps said plug adapter with  
the headphone when it is not in use thereby avoiding its misplacement and potential loss.

20 10. The automatic monaural/stereo headphone defined in Claim 7 wherein said first and  
second coupling impedances are of equal value.

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